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Challenged Expectations: Mere Exposure Effects on Attitudes About Transgender People and Rights

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Social categorization processes may be initiated by physical appearance, which have the potential to influence how people evaluate others. Categorizations ground what stereotypes and prejudices, if any, become activated. Gender is one of the first features people notice about others. Much less is known about individuals who may transgress gender expectations, including people who are transgender. Using an experiment, this study investigates whether the attitudes that people have about transgender people and rights are influenced by information and facial images. We hypothesize that mere exposure to transgender people, via information and images of faces, should be a source of prejudice reduction. We randomly provide participants with vignettes defining transgender and also randomize whether these vignettes come with facial images, varying the physical features of gendered individuals. We find our treatments have lower levels of discomfort and transphobia but have little effect on transgender rights attitudes. We further find that the impacts are stronger among Democrats than among Republicans. Our findings support the argument that people are in general unfamiliar with transgender people, and the mere exposure to outgroups can be a source of prejudice reduction.

KEY WORDS: survey experiment, impression formation processes, expectation violation theory, mere exposure effect, LGBT, transgender

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Our study investigates whether the attitudes people have about transgender people and rights are affected by the information and visuals presented to them, and we test this in an experiment. Physical appearance can potentially influence how people behave toward others because it provides a way to categorize others, and categorizations ground what stereotypes and prejudices become activated (Fiske, Neuberg, Beattie, & Milberg, 1987; Fiske & Neuberg, 1990). Physical appearance in and of itself can shape prejudice beyond categorization (Blair, Judd, & Chapleau, 2004; Blair, Judd, Sadler, & Jenkins, 2002; Zebrowitz, White, & Wieneke, 2008). We randomly provide participants with vignettes defining transgender and also randomize whether these vignettes come with facial images, varying the physical features of gendered individuals. There are few studies on public attitudes about transgender people, and this is the first national study to randomly treat adults with exposure to transgender people and investigate its effect on discomfort, transphobia, and transgender rights. We hypothesize that mere exposure to transgender people, via information and facial images, should be a source of prejudice reduction.

Gender is one of the first features people notice about others (Kessler & McKenna, 1978). Once people classify another individual as a certain gender, their behavior toward that person is augmented by social norms that govern gender behavioral dynamics (Bem, 1981). Social categorization theory is the process through which people categorize others and conditions their attitudes and behaviors toward them (Allport, 1954), and it offers a way to understand prejudice (Macrae & Bodenhausen, 2000). However, much less is known about individuals who do not conform to such gender expectations, such as transgender people.

Social scientists note distinct differences between a person's biological sex and gender identity (Bem, 1981; Hatemi, McDermott, Bailey, & Martin, 2012). Transgender people are those whose gender identity or expression is different than that of their assigned sex at birth. Transgender is an umbrella term that includes those who transition from their birth sex by taking hormone replacements and/or by having surgeries to have their physical sex match their gender identity. The term also incorporates individuals who cross–dress or those who reject gender binaries such as gender-queer (Combs, 2014). This term is contrasted with cisgender, meaning individuals whose gender identity matches their sex assigned at birth. Many people who are transgender are stigmatized for their gender nonconformity, and studies show that there are substantial disparities between transgender and cisgender people in health, suicide ideation, and experiences of workplace discrimination (Clements-Nolle, Marx, & Katz, 2006; Grant et al., 2011; Miller & Grollman, 2015; Perez-Brumer, Hatzenbuehler, Oldenburg, & Bockting, 2015).

Physical appearance may be important in shaping attitudes toward transgender people because some transgender people may not conform to gender norms (e.g., cross–dressers) or may not be perceived as conforming to gender norms. There are differences among transgender people in regard to how they are perceived by others. Perceived gender conformity "serves as a visible and known marker of one's status as a trans[gender] person" (Miller & Grollman, 2015, p. 813). Some transgender people may be perceived as gender conforming (i.e., physical features appear congruent with gender expression) while others as nonconforming (i.e., physical features appear incongruent with gender expression). While all transgender people may be more likely to experience discrimination compared to the general population, discrimination is highest for those who are perceived as gender nonconforming (Connell, 2010; Dozier, 2005; Grant et al., 2011; Knight, Flores, & Nezhad, 2015; Miller & Grollman, 2015).

There are questions about how much the average American understands transgender people and about how this information shapes attitudes on transgender rights. The transgender community did not emerge as an organized political movement in the United States until the 1990s (Murib, 2015; Taylor & Haider-Markel, 2014). American adults tend to self-report a high degree of competency with the concept of transgender, which positively correlates with their attitudes on transgender policies (Flores, 2015). Simultaneously, individuals seem to have high levels of anxiety and uncertainty about

transgender rights, especially policies relating to the use of public accommodations such as restrooms that fit with a person's gender identity and expression rather than their assigned sex at birth (e.g., "gender panics" in Westbrook & Schilt, 2014).

An example of the latter issue is a 2015 ballot-initiative campaign in Houston, Texas to repeal the Houston Equal Rights Ordinance (HERO). HERO banned discrimination in city employment, services and contracting, housing, public accommodations, and private employment for federally protected categories (e.g., sex, race, and national origin) in addition to sexual orientation and gender identity. The campaign to repeal the ordinance emphasized gender-identity protections by nicknaming HERO the "bathroom bill" and airing ads saying HERO will allow "troubled men who claim to be women to enter women's bathrooms, showers, and locker rooms" (Campaign for Houston, 2015).[1] The Houston vote was decidedly against this expansion of transgender rights with 61% of voters deciding to repeal HERO (Harris County Clerk, 2015, p. 9). This result starkly contrasts pre-election polls predicting a much closer result with 43% supporting the ordinance, 37% opposed, and 18% unsure (Drissen, 2015). Assuming that the pre-election polls were correct, many voters may have changed their position on this issue, the majority of undecided voters may have voted in opposition, or some mix thereof. The events in Houston are reflective of the discourse on transgender rights throughout the United States. The advance of transgender rights appears delayed due to "gender panics" (Green, 2016).

What is at the core of these anxieties? They may be rooted in a discomfort with transgender people violating certain social expectations of gender conformity and the common equivalence between sex and gender. People, however, may simply not be familiar with transgender people, and these anxieties reflect their lack of knowledge about the subject. In this study, we examine the role of information and physical appearance on people's attitudes about transgender people. We do so using an original survey experiment of American adults.

Impression Formation, Expectancy Violation, and Mere Exposure

Social category theory postulates that people form impressions about others based on the characteristics that are salient (Fiske & Taylor, 1984). As Miller and Turnball (1986) noted, "we rarely interact with others without at least some expectancies about how they will perform or act" (p. 233). These expectations of the perceiver derive from information about the target individual's personality and demographic characteristics such as sex, age, race, appearance, and so forth. In short, these expectations are stereotypes based on the target's salient group identifications and the perceiver's information about those groups and the target individual.

However, top-down stereotypic or category-driven processes can be countered if the information presented does not fit the category (Fiske et al., 1987). The continuum of impression formation addresses to what extent individuals use information provided to form impressions about others (Fiske et al., 1987). The impression-formation process is conditioned by the information present. Information that is categorically consistent will be dominated by a top-down process, but inconsistent information will lead to greater impression-formation processes that pay attention to the information at hand (Fiske et al., 1987). Subcategorization is a process whereby both categories and information form a new subcategory within existing schema. In the face of disconfirming information, people are more likely to exert greater cognitive effort than they otherwise would (Johnston, Lavine, & Woodson, 2015; Kahneman, 2011; Roese & Sherman, 2007).

[1] Similar concerns were raised during the 2016 debate over Charlotte, North Carolina's adoption of an antidiscrimination ordinance that explicitly allows individuals to use restrooms that conform to their gender identity (Banchiri, 2016)

Since gender has well-established social rules (e.g., Barbee et al., 1993; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Eagly & Karau, 2002), individuals who transgress such norms may trigger more attribute-based processes (e.g., Fiske & Neuberg, 1990). When this occurs, the triggered person is more likely to pay attention to the information presented and update their impressions. Previous studies show that when presented with androgynous or gender nonconforming facial images, people tend to attribute cross-gendered behaviors to those images (e.g., feminine-appearing males to have more feminine behaviors) and perceive them as being nonheterosexual (Madson, 2000; Rogers & Ritter, 2002). When people are presented with images of individuals who are perceived as gender nonconforming, they are more likely to negatively evaluate them when compared to those who are perceived as gender conforming (Gehardstein & Anderson, 2010). Gehardstein and Anderson (2010) find that randomly assigning gender congruent/incongruent faces with vignettes describing these individuals as transsexual affected how people evaluated the emotional well-being and likeability of the transsexual person and the propensity to be attracted to or be a friend or romantic partner with them. The congruent faces led to more positive evaluations than the incongruent faces. Subjects who had higher levels of transphobia also held more negative evaluations, regardless of congruence.

We would expect that when people are shown transgender people who are gender nonconforming that they will react negatively (cf. for lesbians and gay men, Lehavot & Lambert, 2007). Indeed, Miller and Grollman (2015) conclude that perceived gender conformity contributes significantly to discrimination towards those who are transgender. However, individuals may not rely fully on categorical-based or attribute-based processes. If we consider that people are relatively uninformed about transgender individuals, then it may be that when knowingly exposed to transgender people—regardless of perceived conformity—that the violation of traditional gender norms may make them perform an intermediary task such as subcategorization (e.g., Fiske & Neuberg, 1990). Individuals also tend to reduce stereotypical and dehumanizing thinking when presented with counterstereotypes (Prati, Crisp, & Rubini, 2015; Prati, Vasiljevic, Crisp, & Rubini, 2015). Thus, people may subcategorize transgender within existing gender schema, and recategorization is an ameliorating and prejudice-reducing process (Dovidio et al., 1997; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993).

Several studies investigate how prejudices about social outgroups can be reduced. Social psychologists find that a simple exposure to outgroups can be a source of prejudice reduction. The mere exposure hypothesis explains that individuals increase their liking toward targets by simply being exposed to them multiple times (Zajonc, 1968, 2001). These likeability effects increase as repetitions increase, but even a single exposure tends to increase favorability toward the target (Monahan, Murphy, & Zajonc, 2000; Zajonc, 2001). Providing individuals an opportunity to be exposed to an outgroup may normalize the experience (Zebrowitz et al., 2008). Exposures to a specific individual target may not solely increase favorability of that individual. Likeability expands beyond the *specific* targets to the group that the target represents (Verosky & Todorov, 2010). Showing images of racial minorities, for example, increases likeability and reduces prejudice about those racial minority groups (Zebrowitz et al., 2008).

Figure 1 depicts the continuum of impression formation as it relates to exposure to transgender people. Assuming gender conformity, top-down impressions would be automatic when individuals observe cisgender men and women. We expect more bottom-up processes to occur with transgender people as they challenge the categorical expectation of the parity between sex and gender. These attribute-driven processes will rely on the information present, including physical features (Madson, 2000). However, the degree to which attributes influence impressions may be offset with the presentation of a new category: transgender. If people are basing their judgments on transgender in a purely attribute-based fashion, we should expect to see differences by perceived conformity. Recategorization minimizes the amount of influence attributes make on impression formation. Finally, by

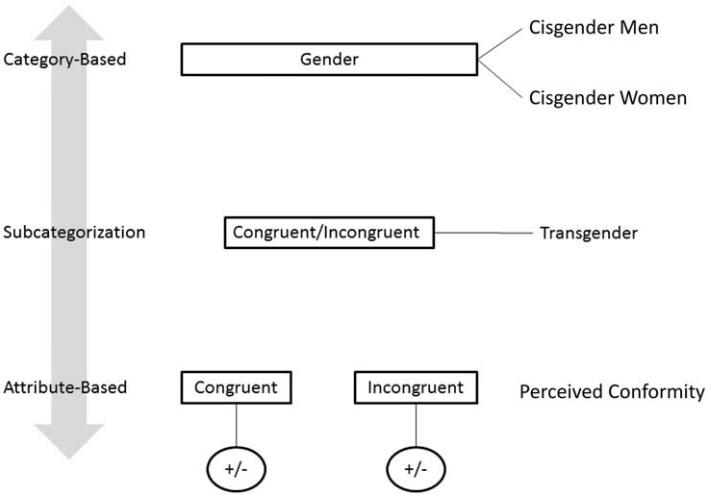

Figure 1. Hypothesized representation of category-based, affect-based, and intermediate processes.

recategorization and the mere exposure hypothesis, we expect the information presented will reduce transgender prejudice.

According to the mere exposure hypothesis, when people are exposed to an outgroup, the experience is anxiety-reducing (Zebrowitz et al., 2008). We posit the following hypotheses:

H1: Mere exposure to transgender people should reduce antitransgender attitudes.

If perceived conformity conditions the outcomes, then effects should be different among individuals exposed to congruent or incongruent faces, and congruent faces should be more positively evaluated than incongruent faces (e.g., Gehardstein & Anderson, 2010). This result would draw the conclusion that a much more attribute-based impression-formation process is taken.

H2A: The effect of exposure depends on perceived conformity. (Attribute-based)

Otherwise, we would infer that exposure lends to an intermediary process of subcategorization:

H2B: The effect of exposure does not depend on perceived conformity. (Subcategorization)

It is also important to consider the predispositions and group identities people have that may enhance or dampen the effects of exposure. Cognitive biases may condition how individuals evaluate political arguments and are thus persuaded (Arceneaux, 2012). Identity may be one source of cognitive bias which can affect attitudes by cueing, inhibiting or enhancing information processing, biasing which thoughts occur, or providing an additional rationale (Fleming & Petty, 2000). Partisanship conditions the effectiveness of prejudice reduction of interpersonal contact with lesbians and gay men, with no effect among strong Republicans (Dyck & Pearson-Merkowitz, 2014). In the context of transgender people, then, partisan identity may be a predisposition that can enhance or inhibit the effects of mere exposure.

Party elites have clearly defined their stances on transgender issues. The Democratic Party aligned with the LGBT rights movement, and President Obama has expanded transgender rights by the use of Executive Orders. At the same time, many Republican Party elites have taken stances

against the expansion of transgender rights, and Republican-led state legislatures have passed policies banning gender-identity protections. Despite public support for some transgender rights issues, such as protection from employment discrimination, Republican control of state legislatures reduces the likelihood that states have transgender-inclusive nondiscrimination laws (Flores, Herman, & Mallory, 2015).

As the parties have more clearly defined their positions on transgender issues, partisans might receive these position signals (e.g., Druckman, Peterson, & Slothuus, 2013; Levendusky, 2010). Partisan identities can cause people to reason about issues differently (Leeper & Slothuus, 2014). Partisans, for example, react differently when presented with LGBT issues; Republicans tend to be more disgusted by them, and such disgust translates to lowered support for LGBT rights (Casey, 2015). In fact, transgender-specific issues tend to cause more disgust than other LGBT issues (Casey, 2015). Party identification, then, should condition the effect of mere exposure:

> *H3*: Mere exposure to transgender people will reduce antitransgender attitudes among individuals who more strongly identify with the Democratic Party.

Method

We examine exposure effects by utilizing an experiment with an online national sample of American adults. The survey was jointly funded by the University of Toledo, University of Kansas, the Williams Institute at the UCLA School of Law, and Ohio University. We commissioned Clear Voice Research (CVR) to conduct the survey; CVR fielded the survey in an online format from June 12 to June 25, 2015. The survey also included a variety of questions on LGBT issues and respondent characteristics.

Participants

Our survey participants were not selected using a probability-based sample. However, while acknowledging recent research that shows wide variation in accuracy of online panels (Kennedy et al., 2016), the sampling methodology used by CVR moves beyond student samples and online convenience samples such as Amazon Mechanical Turk.[2] CVR recruited survey participants by emailing 51,492 empaneled members. Prior to recruitment, CVR conducted an extensive member-profile survey and used Internet protocol, postal address, and phone or text message verification.[3] This practice reduced duplication of respondents and also allowed data collection to meet demographic targets. Similar panels such as YouGov/Polimetrix have often shown to be accurate at providing inferences generalizable to the American adult population (Rivers & Bailey, 2009). Of those who received the recruitment e-mail, 2,102 subjects participated in the survey, which provided a response rate of 10.8% (AAPOR RR2).

The mean age of the respondents was 50.6 years. A majority of respondents identified as White (80.5%), 9.2% identified as Black, 4.1% were Latino, 3.2% were Asian, and 2.3% identified as multiracial. Approximately half of respondents were women (49.2%). By party identification, about one-third of the respondents identified as Republicans (32.3%), 44.3% were Democrats, and 23.4% were Independents. Although marginal demographics may not fully characterize the bias in online panels (Kennedy et al., 2016), we note in Appendix S1 of the online supporting information that the

[2] We pretested the experiment with a sample of 247 people recruited through Amazon Mechanical Turk. While many of the results are similar to what we report here, the MTurk sample tended to exaggerate treatment effects.

[3] The full methodology that CVR uses is proprietary. We are unable, for example, to compare the differences in the demographics of those who received these e-mails to those who actually responded to the survey.

demographic distributions of the participants are more similar to traditional telephone surveys than the demographics of Amazon Mechanical Turk workers.

Stimulus Materials

A key rationale for using the online survey format is that we are able to incorporate images into our treatments. Participants were randomly assigned to one of three treatments or to a control group. All treatment groups received a short vignette informing respondents what the terms "gender identity" and "transgender" mean. A 2011 survey by Public Religion Research Institute found that only 69% of the public could identify the meaning of the term "transgender" without any assistance, so our treatments should be provided with accurate information. We provided this information even though prior research demonstrates that randomly providing a short definition of transgender had no effect on people's attitudes on transgender rights (Flores, 2015). Our vignette, however, provides more comprehensive definitions than prior research, which may result in different evaluations of transgender people and rights. The vignette in each treatment group was the same, with the following text:

> "Gender identity refers to how a person identifies their own gender (as a man, woman, or some other label). For many people their gender identity may not match their birth sex. For example, a man may identify more as female, or a woman may identify more as male. Transgender is a general term for people whose gender identity or expression is different from their birth sex. Some transgender people may undergo gender transition with medical procedures like hormone therapy or surgery (often commonly called a 'sex change'), but others do not seek such medical assistance. Transgender includes groups you might have heard before, including transsexual, cross-dressers, or gender queer people."

Subjects assigned to the control group were given a placebo vignette about Japanese economic growth. Subjects assigned to the first treatment group were exposed to the transgender vignette, but they received no images (No Image). A second treatment group was provided gender-congruent facial images and the transgender vignette (Congruent), while the third treatment group was given gender-incongruent facial images and the transgender vignette (Incongruent). These image treatments are displayed in Figure 2. The four images (male and female gender-congruent and gender-incongruent individuals) used in our study were developed by Gehardstein and Anderson (2010).[4] The gender congruent/incongruent images were designed to offer differing representations of transgender people. Subjects were assigned to a Congruent condition that presented both the masculine-appearing male and feminine-appearing female images or to an Incongruent condition that presented both the feminine-appearing male and masculine-appearing female.

Pretest Questionnaire

The CVR experiment was a part of larger survey instrument that included pretest questions unrelated to the current study. Respondents addressed questions about news attentiveness, race and criminal justice, smoking habits, gun ownership, attitudes toward wealth and success, the use of drones in armed conflict, political knowledge, and authoritarianism. We further measured religious

[4] The corresponding author granted permission to use their congruent/incongruent treatment for the current study. The images were developed by first creating 10 images of faces of Caucasian people in their early 20s (five men and five women) in Adobe Photoshop. Afterward, 22 undergraduate students classified the images according to their masculinity and femininity. The most masculine male and most feminine female were categorized as gender congruent, and the most feminine male and most masculine female were categorized as gender incongruent. The remaining six images were discarded.

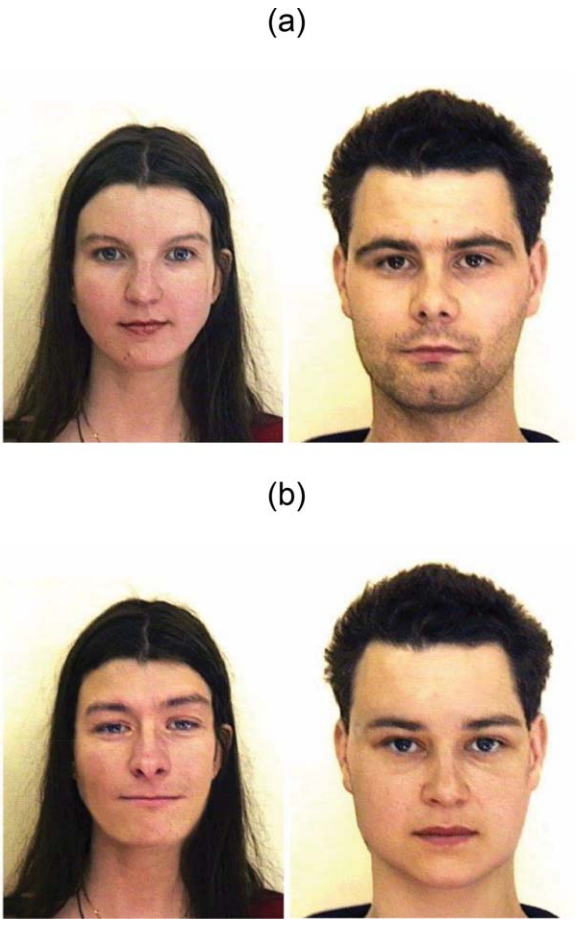

Figure 2. Images used in the treatment conditions: (a) Congruent Treatment and (b) Incongruent Treatment. Reprinted with permission from Gehardstein and Anderson (2010). [Color figure can be viewed at wileyonlinelibrary.com]

identification and beliefs that social groups such as African Americans, women, Muslims, and Hispanics should have equal rights. Respondents also answered a four-item battery measuring the standard ANES (American National Election Survey) moral traditionalism scale ($\alpha = 0.75$). Other demographics were provided from the extensive profile of participants that CVR collects and a demographic questionnaire that we added.

Dependent Variables

The survey posttest asked respondents their attitudes, beliefs, and opinions about transgender people and rights. These questions were packaged into three distinct batteries: discomfort with transgender people, transphobia, and transgender rights. Each battery was presented in sequential order. Full question wordings are provided in Appendix S2 in the online supporting information.

Discomfort with transgender people. Subjects were asked whether they were personally comfortable or uncomfortable with a transgender person, a cross–dresser, and a transsexual.[5] Respondents were able to indicate that they were comfortable, somewhat comfortable, somewhat uncomfortable, or

[5] Each of these terms fall under the umbrella term of "transgender."

Table 1. Mean Scores on Dependent Variables by Treatment Group

	Discomfort			GTS			Equality Policies			Accommodations Policies		
Treatment	*Mean*	*SE*	*N*	*Mean*	*SE*	*N*	*Mean*	*SE*	*N*	*Mean*	*SE*	*N*
Control	0.00	–	443	0.00	–	482	0.00	–	459	0.00	–	459
No Image	0.06	(0.08)	442	−0.13*	(0.07)	487	−0.04	(0.08)	470	−0.04	(0.08)	470
Congruent Image	−0.11*	(0.08)	434	−0.08	(0.07)	488	0.03	(0.07)	471	0.01	(0.08)	471
Incongruent Image	0.10	(0.08)	443	−0.13*	(0.07)	475	−0.01	(0.08)	465	0.04	(0.08)	465

Note. Estimated means are from multiple group factor analysis models applying propensity score weights. Model fit diagnostics are: Discomfort $\left(\chi^2_{24} = 30.71;\ \text{TLI} = 1.00;\ \text{CFI} = 1.00;\ \text{RMSEA} = 0.025,\ 90\%-\text{CI}: 0.00,\ 0.05\right)$, GTS $(\chi^2_{107} = 115.59;\ \text{TLI} = 1.00;\ \text{CFI} = 1.00;\ \text{RMSEA} = 0.013,\ 90\%-\text{CI}: 0.00,\ 0.03)$, Policies $(\chi^2_{179} = 512.27;\ \text{TLI} = 0.99;\ \text{CFI} = 0.99;\ \text{RMSEA} = 0.063\ 90\%-\text{CI}: 0.057,\ 0.07)$. $^*p < 0.10$ (one-tailed). The policies model includes both Equality and Accommodations factors.

uncomfortable. Overall responses showed that 38% were uncomfortable with transgender people, 40% with transsexuals, and 45% with cross–dressers. The three items had high internal consistency ($\alpha = 0.97$), and factor analysis loadings range from 0.95 to 0.98, indicating high measurement reliability.

Transphobia. We used questions from the Genderism and Transphobia Scale (GTS) to measure general antipathy toward gender nonconformity (Hill & Willoughby, 2005). Due to space constraints, we used only a subset of the GTS focusing primarily on genderism and transphobia subscale questions. These items were selected because they strongly loaded onto the factor identified by Hill and Willoughby (2005, Table 3).[6] The five items scaled onto the same construct that we call transphobia ($\alpha = 0.91$), and the absolute factor loadings range from 0.64 to 0.90.

Transgender rights. We also included a battery of questions relating to the rights of transgender people. We used some of the questions that were asked in the Public Religion Research Institute (2011) survey on transgender rights (see Flores, 2015, Table 1). We also created original questions mimicking items relating to gay rights found in the General Social Survey and the ANES. Additionally, we asked questions about transgender rights (e.g., public accommodations, certain healthcare-related items, and access to public restrooms). To reduce the number of comparisons and hypothesis tests performed, we first constructed scales relating to the policy items. Appendix S3 in the online supporting information shows that these policies group into two domains: policies relating to equality ($\alpha = 0.90$) and policies uniquely relating to accommodations ($\alpha = 0.75$).

All three batteries—discomfort with transgender people, transphobia, and transgender rights—highly covary with one another. In preliminary analyses, we assessed the overall factor structure of these batteries to ensure that they should be treated as distinct constructs for further analysis (see Appendix S4 in the online supporting information). We found that items uniquely loaded onto factors in a way that would be anticipated, and very few items loaded onto multiple factors. Unintended cross-factor loadings were substantively small and often statistically insignificant. We decided for conceptual clarity to not allow for cross-factor loadings, analyzing each scale as previously described. The covariance among the factors also lends to criterion validation of the constructs because comfort with transgender people, transphobia, and policy opinions should theoretically be related to one another.

Analysis

Propensity score weighting. We first conducted a full assessment of balance checks based on pretest questions of traditionalism, equal rights for other minorities, religious identification, and other

[6] Despite its strong factor loading in Hill and Willoughby (2005), we excluded the indicator "Men who cross-dress for sexual pleasure disgust me" because our survey was measuring disgust with other indicators.

demographics in order to ensure that randomization was successful. Since the experiment was also a part of a larger survey, 267 respondents attrited before treatment was administered. Our balance checks revealed that there were some significant differences across our treatment groups according to the pretest (but not on demographics), so we estimated covariate balance propensity scores (CBPS) to minimize these differences (Fong, Ratkovic, & Imai, 2014; Imai & Ratkovic, 2014). Propensity scores estimated from baseline covariates increase efficiency in the estimation of causal effects (Loux, 2015). CBPS is beneficial because the process optimizes estimation of multiple treatments and achieves covariate balance. After weighting on the propensity scores, there were no significant differences in the pretest or demographics of the respondents. We further removed 71 respondents due to item nonresponse. The CBPS estimation procedure also provides a summary statistic that indicates whether the model is inappropriate to predict treatment assignment, and we find that our estimation is not inappropriately specified (Hansen's $J = 20.45$, 15 df).[7]

Covariate adjustment. We use covariate adjustment to increase the efficiency of estimated effects (Gerber & Green, 2012; Ho, Imai, King, & Stuart, 2007). We adjust for pretest levels of traditionalism. We account for partisanship by using a 7-point scale ranging from strongly Democratic to strongly Republican. We additionally account for respondent age, gender, and race or ethnicity. Prior research has found that these covariates explain variation in attitudes toward transgender rights and people (Flores, 2015; Norton & Herek, 2013).

Structural equation modeling. Since the dependent variables form unique constructs, it is important to model uncertainty in estimating the dependent variable in addition to the structural regression results for the treatment effects. Structural equation modeling (SEM) allows us to simultaneously estimate a measurement model for our dependent variables and examine the structural parameters of the treatment effects. Since our items constructing the dependent variables are ordinal, we use a weighted least squares with mean adjusted variance (WLSMV) estimator (Brown, 2015). We report the results of both the measurement and structural models for each analysis. We standardize the latent constructs to have a mean of zero and variance of one. We also report the comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximate (RMSEA) for model fit (Hu & Bentler, 1999).[8]

After our estimations, we also report standardized effect sizes (i.e., Cohen's d) to detail the magnitude of the treatment effects. We rescaled all of the factors such that positive values correspond with more antitransgender attitudes. Finally, we interact our treatment by partisanship to test our third hypothesis. Here we report only treatment effects across partisanship and include the full model output in Appendix S4 in the online supporting information.

Results

Mean scores. We report in Table 1, the average levels of discomfort, transphobia (GTS), and transgender rights (Equality Policies, Accommodations Policies) across the different treatment groups. Since the scales were measured as latent variables, we constrained the mean of the control group to zero in a multiple group factor analysis. Each multiple group model generally meets traditional model fit criteria as noted in Table 1. Mean scores on discomfort are significantly lower for respondents in the Congruent and Incongruent treatment groups compared to the Control group, but the No Image treatment did not significantly differ from the Control group. Mean scores on transphobia are lower for the three treatment groups compared to the Control group, but the Congruent group is not

[7] The results do not substantively differ whether we incorporate these weights or not.
[8] Conventional evaluations of model fit in SEM include a CFI ≥ 0.95, TLI ≥ 0.95, and a small RMSEA preferably with 0 in its 90% confidence interval.

Table 2. Treatment Effects on Discomfort With Gender Nonconforming Groups

Variable	Estimate (*SE*)
Structural Model	
No Image	0.06 (0.08)
Congruent	−0.14 (0.08)**[a]
Incongruent	−0.14 (0.08)**[a]
Female	−0.33 (0.06)***
30-44 Years Old	−0.02 (0.10)
45-64 Years Old	0.04 (0.09)
65 Years or more	0.02 (0.10)
White	0.02 (0.07)
Partisanship	0.05 (0.02)***
Traditionalism	0.62 (0.04)***
Measurement Model (Comfortable –Uncomfortable)	
Discomfort Transgender	0.97 (0.003)
Discomfort Crossdresser	0.95 (0.004)
Discomfort Transsexual	0.98 (0.003)
N	1,762
χ^2_{20}	25.33
CFI	1.00
TLI	1.00
RMSEA [90% CI]	0.01 [0.000, 0.025]

Note. Propensity score weighted structural equation model using weighted least squares means and variance adjusted estimation; *$p < .10$; **$p < .05$; ***$p < .01$ (one-tailed).
[a]Difference from "No Image" treatment is significant at $p < .05$ (one-tailed).

significantly lower. For both Equality Policies and Accommodations Policies, there are no significant differences for any of the treatment groups compared to the control group.

Regression results. In Table 2, we report the treatment effects on discomfort with transgender people. We scaled the dependent variable such that positive coefficients in the structural model indicate greater discomfort and negative coefficients indicate greater comfort. The fit statistics indicate that the model appropriately fits the data. We find significant treatment effects for respondents who received image treatments. Relative to the Control group, people who received the Congruent or Incongruent images reported less discomfort with transgender people. Further, lower rates of discomfort were reported in the Congruent or Incongruent treatment relative to respondents assigned to the No Image condition. We also find no significant difference between the Congruent and Incongruent treatment, and their estimated effects are quite similar.

In Table 3, we report the treatment effects on genderism and transphobia. We scaled the measurement model such that positive coefficients in the structural model indicate higher levels of transphobia and negative coefficients indicate lower levels of transphobia. The model fit statistics suggest that the model is an appropriate fit to the data. Here, we find significant treatment effects for each condition. We also find that the effect sizes do not significantly differ across conditions. Relative to the control, the No Image, Congruent, and Incongruent treatment reduced transphobia.

In Table 4, we report the treatment effects on transgender rights. We scaled these policies such that positive values indicated stronger disagreement with transgender rights. Since the transgender-rights questions formed two subscales, we report the results from a model that simultaneously evaluates treatment effects on both policy areas. These policy subsets modestly correlate with one another $(r = 0.44)$. We do not find treatment effects for any treatment assignment on either policy domain. There also are no significant differences between conditions regardless of the policy type.

Although we do find significant treatment effects on discomfort with transgender people and transphobia, the magnitude of these effects is relatively small. The largest effect size (Cohen's d) we

Table 3. Treatment Effects on Genderism and Transphobia Scale

Variable	Estimate (*SE*)
Structural Model	
No Image	−0.18 (0.07)***
Congruent	−0.13 (0.07)***
Incongruent	−0.18 (0.07)***
Female	−0.26 (0.05)***
30-44 Years Old	0.09 (0.09)
45-64 Years Old	0.06 (0.08)
65 Years or more	−0.03 (0.09)
White	−0.47 (0.06)***
Partisanship	0.08 (0.01)***
Traditionalism	0.99 (0.03)***
Measurement Model (Strongly Agree – Strongly Disagree)	
Sex change operations are morally wrong	−0.90 (0.01)***
If a friend wanted to have his penis removed in order to become a woman, I would openly support him	0.64 (0.01)***
A man who dresses as a woman is a pervert	−0.75 (0.01)***
It is morally wrong for a woman to present herself as a man in public	−0.88 (0.01)***
God made two sexes and two sexes only	−0.68 (0.01)***
N	1,932
χ^2_{45}	260.67
CFI	0.99
TLI	0.98
RMSEA [90% CI]	0.05 [0.044, 0.056]

Note. Propensity score weighted structural equation model using weighted least squares means and variance adjusted estimation; *$p < .10$; **$p < .05$; ***$p < .01$ (one-tailed).

observe across all of the treatments is 0.13, indicating a relatively small effect. The effect sizes range from 0.09 to 0.13 among treatment effects that were statistically significant. The smallest effect sizes correspond with the treatment effects that lacked significance, especially the treatment effects on transgender rights. This further suggests that our null findings on transgender rights are both substantively and statistically insignificant.

Figure 3 plots the treatment effects by partisanship. Each row corresponds to a different dependent variable scale, and each column corresponds to a treatment group. For discomfort and transphobia, we find that the treatment effects tend to be strongest among strong Democrats, and we often find no evidence of a treatment effect among strong Republicans. This pattern is clearest among participants assigned to the Congruent condition. Strong Democrats in the Congruent condition have significantly lowered discomfort (−0.20, $SE = 0.13$, $p < 0.10$) and transphobia (−0.26, $SE = 0.12$, $p < 0.05$) while strong Republicans have negligible changes in discomfort (−0.05, $SE = 0.15$, $p = 0.36$) and transphobia (0.03, $SE = 0.13$, $p = 0.43$). The results for the Incongruent condition do not vary by partisanship, and those in this treatment group tend to have lowered antitransgender attitudes. Similar to the main effects on Equality Policies, we do not find any significant treatment effects or effect heterogeneity by partisanship.

We do, however, find significant conditional effects for Accommodations Policies. Strong Democrats become less opposed in the No Image condition (−0.5, $SE = 0.15$, $p < 0.05$), but strong Republicans become more opposed (0.26, $SE = 0.16$, $p < 0.05$). Strong Democrats also appear to be less opposed to Accommodations Policies in the Congruent condition, though not significantly (−014, $SE = 0.14$, $p = 0.16$). Strong Republicans, on the other hand, are more opposed to transgender rights in the Congruent treatment (0.21, $SE = 0.16$, $p < 0.10$). The differences between treatment effects between Strong Republicans and Strong Democrats are significant on Accommodations Policies in

Table 4. Treatment Effects on Transgender-Related Policies

Variable	Equality Policies Estimate (*SE*)	Accommodations Policies Estimate (*SE*)
Structural Models		
No Image	0.04 (0.08)	−0.06 (0.09)
Congruent	−0.05 (0.08)	0.02 (0.08)
Incongruent	−0.00 (0.08)	−0.04 (0.09)
Female	−0.30 (0.05)***	−0.25 (0.06)***
30-44 Years Old	0.10 (0.10)	0.10 (0.11)
45-64 Years Old	0.08 (0.09)	−0.08 (0.11)
65 Years or more	−0.08 (0.10)	−0.12 (0.12)
White	−0.17 (0.07)***	−0.34 (0.08)***
Partisanship	0.11 (0.02)***	0.11 (0.02)***
Traditionalism	0.68 (0.03)***	0.86 (0.04)***
Measurement Model (Completely Disagree – Completely Agree)		
Legal protections that apply to gay and lesbian people should also apply to transgender people.	−0.86 (0.01)***	–
Congress should pass laws to protect transgender people from job discrimination.	−0.86 (0.01)***	–
Congress should not pass laws to protect transgender people from dis crimination in public accommodations.	–	0.72 (0.02)***
Insurance companies should not be required to pay for medical treat ment related to transgender health issues.	–	0.49 (0.03)***
Laws should protect transgender children from bullying in schools.	−0.75 (0.01)***	–
Businesses should have the right to refuse services to transgender people based on religious beliefs.	–	0.81 (0.02)***
Transgender people deserve the same rights and protections as other Americans.	−0.88 (0.01)***	–
Transgender people should only be allowed to use public restrooms that are consistent with the sex listed on their driver's license/state ID card.	–	0.33 (0.03)***
Transgender people should be allowed to serve openly in the military.	−0.72 (0.02)***	
$r_{F1,F2}$	0.44 (0.03)	
N	1,865	
χ^2_{96}	739.82	
CFI	0.96	
TLI	0.95	
RMSEA [90% CI]	0.06 [0.056, 0.064]	

Note. Propensity score weighted structural equation model using weighted least squares means and variance adjusted estimation. Factors are re-scaled such that positive values represent less supportive attitudes; *$p < .10$; **$p < .05$; ***$p < .01$ (one-tailed).

the No Image condition (-0.61, $SE = 0.26$, $p < 0.01$) and the Congruent condition (-0.36, $SE = 0.24$, $p < 0.10$). The Incongruent condition, similar to the main effects, did not affect accommodations attitudes, and this is the case across partisanship.

Discussion and Implications

This study investigated whether the attitudes that people have about transgender people and transgender rights are influenced by information and gender-congruent and gender-noncongruent facial images. We hypothesized that mere exposure to transgender people, via information and facial images, should be a source of prejudice reduction. Our experiment shows that presenting people with information and faces of transgender people can be a source of prejudice reduction, supporting Hypothesis 1. We further found that the effect does not greatly differ if transgender people are

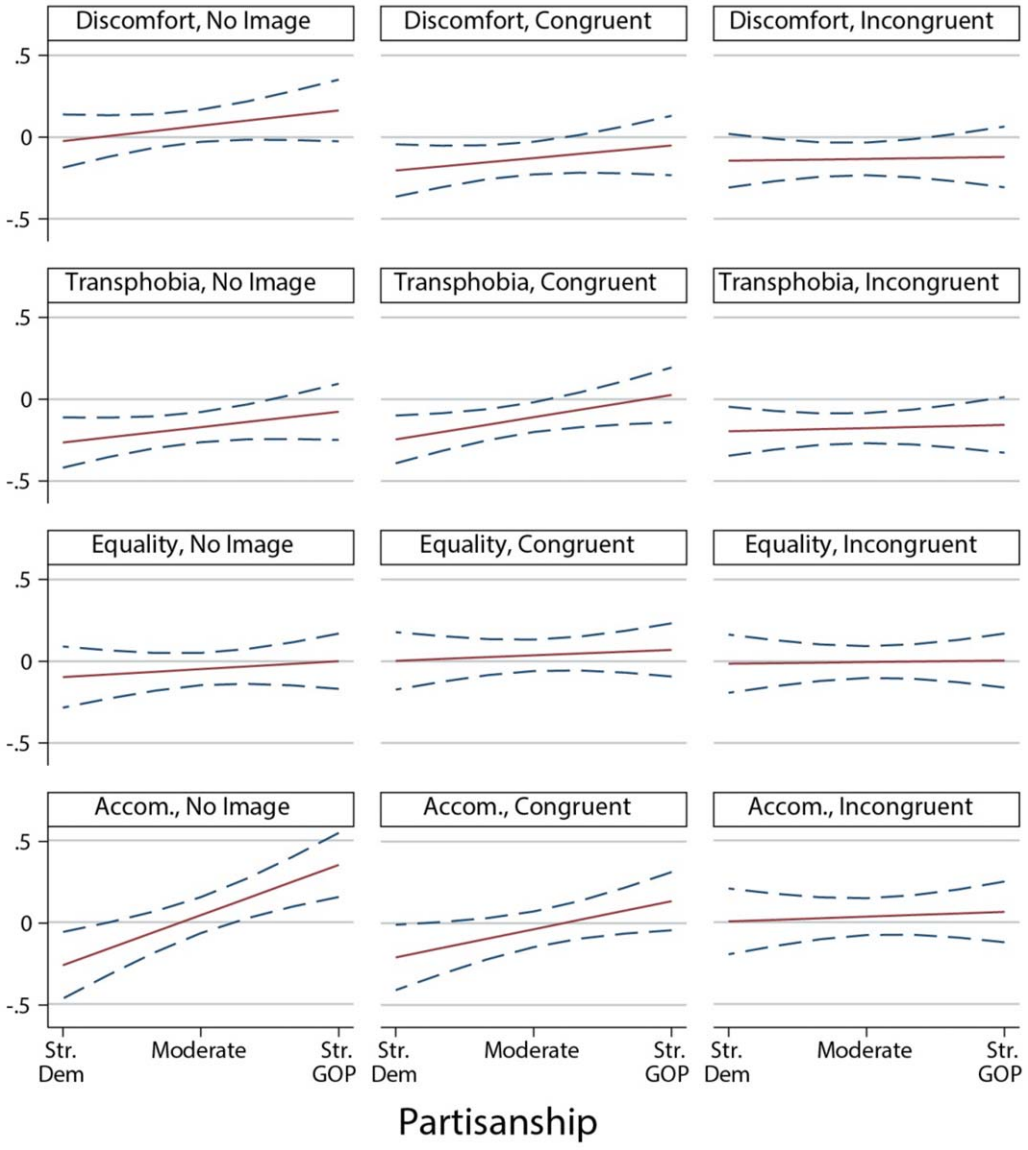

Figure 3. Treatment effects by partisanship. Str. Dem = Strongly Democratic; Str. GOP = Strongly Republican; Accom.- = Accommodations; dashed lines indicate 80% confidence intervals. All dependent variables are scaled such that positive values reflect antitransgender attitudes. [Color figure can be viewed at wileyonlinelibrary.com]

perceived as conforming or nonconforming. We therefore reject Hypothesis 2A in favor of Hypothesis 2B, which indicates that varying perceived conformity has little impact on attitudes. These effects are consistent with a subcategorization impression-formation process, where people base their impressions about new objects not solely on the category or attribute. All of the treatments contained a definition of transgender, which may have encouraged subcategorization.

Future research should examine how important visual stimuli are as a factor in the impression-formation process. For instance, our control group received only a vignette, and we are thus incapable of unpacking whether the Congruent or Incongruent stimuli have their effects relative to a control condition that also included a visual stimulus. Future research could include a control image and

randomize both the vignette and image in order to further parse these effects. The No Image treatment failed to have an effect on discomfort while both image treatments did. This suggests that pairing faces with the concept of transgender uniquely contributes to people's level of comfort. Our results reflect extensive research showing that "appearance makes a contribution apart from its effect on categorization" (Zebrowitz et al., 2008, p. 260).

The direction of our effects also suggests that the impressions that were formed did not cause a reaction against transgender people. On average, attitudes improved. Prejudices may be reduced by giving people a chance to categorize objects that may be unfamiliar. Theoretically, people categorized transgender as a new subcategory within existing gender schema. Recategorization may reduce prejudice (Dovidio et al., 1997; Gaertner et al., 1993), so exposing people to information about transgender may increase familiarity and likeability of the group (e.g., Monahan et al., 2000; Zajonc, 1968, 2001). Increased familiarity is central to the hypothesized relationship between mere exposure, recategorization, and prejudice reduction. Face familiarity in the mere-exposure literature can affect attitudes (DeBruine, 2002; Hill et al., 1990; Lewicki, 1985; Zebrowitz et al., 2007) and expand to group evaluations (Verosky & Todorov, 2010; Zebrowitz et al., 2008). A next step to the present findings will be to examine familiarity as the causal mechanism linking exposure to prejudice reduction.

The mere-exposure effect has been linked by others to the prejudice reduction frequently observed by interpersonal contact (Zebrowitz et al., 2008, p. 273), where previously held prejudices and anxieties may be alleviated by building affective ties and empathy with minority outgroups (Schiappa, Gregg, & Hewes, 2005; see also Pettigrew, 1998). Though Allport (1954) identifies specific conditions for interpersonal contact to take effect, Pettigrew and Tropp (2006) find that these conditions are not necessary for prejudice reduction. This finding consistently operates for many social groups, especially for sexual minorities where the magnitude of the effects tends to be larger than for other minorities (Pettigrew & Tropp, 2006). The effect of contact is contested for transgender people with some studies finding positive effects (King, Winter, & Webster, 2009; Pierceson & Kirzinger, 2015) and others finding insignificant and slightly negative effects (Flores, 2015; Tee & Hegarty, 2006). Our results suggest that mere exposure can serve as a prejudice-reducing process, and we consider these findings as consistent with the expectations of interpersonal contact even when direct-contact conditions are not present.

We observed no effect of the treatment on people's policy positions on transgender rights. This pattern is similar to Broockman and Kalla (2016) who also find greater treatment effects on likeability than policy. While people's antipathy toward minorities is a strong correlate of positions on minority-related policies (e.g., Banks & Valentino, 2012; Kinder & Sears, 1981), they are not perfect correlates of one another. Herek (2009) shows, for example, that people's antipathy toward gays and lesbians is only one source of their positions on gay rights. Factors such as moral traditionalism, partisanship, and ideology contribute more to policy positions than antigay attitudes. We also found these effects to be strongest among those with predispositions associated with prejudice reduction; namely, among strongly identified Democrats. This supports Hypothesis 3.

Our experiment also shows that partisanship can condition treatment effects on policy attitudes. Although partisanship did not appear to be a conditioning factor for equality policies, there was a stronger indication that partisanship mattered for accommodations. Strong Democrats tended to have increased support for such policies when in the No Image or Congruent conditions and strong Republicans had lowered support for such policies in the No Image conditions. These findings are consistent with studies identifying that partisans think about issues differently (Leeper & Slothuus, 2014), and partisans emotionally react to LGBT issues differently (Casey, 2015). We further consider these findings as complementing previous research showing that the effects of interpersonal contact are strong for Democrats and null for strongly identified Republicans (Dyck & Pearson-Merkowitz, 2014).

Our findings also speak to broader political implications regarding ballot measures on transgender rights. Since the presentation of conforming and nonconforming transgender people induced similar

effects, we believe that people are engaging in an intermediary impression-formation process. If people were solely forming impressions based on attributes, then we should have observed different treatment effects by perceived conformity. We did not, and this suggests that individuals recategorize transgender as a subcategory within existing gender schema. This is consistent with the notion that people are generally unfamiliar with transgender people, and the mere exposure to outgroups can be a source of prejudice reduction (Zebrowitz et al., 2008). The findings imply that increased familiarity with transgender people among Americans may be persuasive. The varying results on referenda campaigns (e.g., Taylor et al., 2014) on transgender-rights measures suggest that people can be persuaded on this topic. It is clear that recent campaigns opposed to transgender rights (e.g., Houston in 2015) have been able to exploit gender panics to great effect (e.g., Westbrook & Schilt, 2014). The present findings lend greater support for this notion and highlight Americans' uncertainty about transgender people. Our results lend further significance to the emergence of the transgender movement (Murib, 2015) and the increased mass media coverage of transgender people. Advocates seeking to ease the difficult realities in the lives of transgender people face can rely on increased visibility of this group for prejudice reduction.

These findings appear, at first blush, to challenge recent scholarship that disparities and discrimination rates are greatest for transgender people who are perceived as gender nonconforming (Miller & Grollman, 2015). However, these findings may not necessarily be the subpopulation where perceived conformity conditions a person's antitransgender attitudes and behaviors, which may reflect disparities in the aggregate. Such discriminatory occurrences may also occur in a highly situational context where our experiment lacks external validity. These experiments may not directly reflect the contexts where perceived conformity is consequential. "Gender panics" as described by Westbrook and Schilt (2014) may be more frequent in contexts where attributes become central in conditioning people's responses. Future studies may examine the contextual conditions under which people rely more on attributes than categories (e.g., outcome dependency in Neuberg & Fiske, 1987).

Our experimental treatments were also purely informational, and we did not prime values or emotions or frame transgender rights in varying ways. Our small overall effect sizes likely reflect this decision. There may be stronger treatment effects with priming and framing; however, we chose to initially investigate this question because of the relatively recent emergence of transgender-related issues into the American consciousness. Given the use of such priming and framing in our current politics, we encourage future researchers to pursue these avenues of research. As Haider-Markel and Taylor (2016) argue, transgender rights are likely to be a flashpoint in the ongoing battle for LGBT equality. Expanding research into and knowledge about the factors that affect attitudes on transgender rights, as we have done in this article, is important given its increasing salience in our society.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix S1: Demographic Characteristics and Comparisons With Other Surveys

Table S1: Demographic Characteristics of the Survey Participants, Mturk Workers, and 2008 NAES

Appendix S2: Question Wording

Table S2: Question Wording of Dependent Variables

Table S3: Question Wording of Partisanship and Traditionalism

Appendix S3: Balance-Checks Before and After Weighting

Table S4: Tests of Independence Among Demographics and Pre-Test Across Treatment Conditions

Appendix S4: Exploratory Factor Analysis of the Transgender Policy Questions

Table S5: Fit Statistics From an Exploratory Factor Analysis on Transgender-Related Policies

Table S6: Exploratory Factor Loading From the Retained Two-Factor Model

Appendix S5: Further Support for Four Constructs for Analysis

Figure S1: Scree Plot of Eigenvalues

Table S7: Fit Statistics From an Exploratory Factor Analysis on Transgender-Related Policies

Table S8: Exploratory Factor Analysis Results With Four Factors

Appendix S6: Tabular Results for Partisanship Interaction

Table S9: Regression Results to Examine Heterogeneous Treatment Effects by Partisanship